LOW NOISE TRANSMITTER ARCHITECTURE

USING FOLDOVER SELECTIVE BAND FILTERING

AND METHOD THEREOF

ABSTRACT

The present invention describes an apparatus capable of producing a radio frequency (RF) transmit (Tx) signal for a radiotelephone low enough in noise without requiring a post power amplifier (PA) cleanup filter.

A Tx signal generated by a modulator (710) is sent through a different filter by a first and second switches (714 and 728) based upon the frequency of the Tx signal, and each of the filters (720 and 724) are designed to reduce the noise floor of a certain predetermined region within a specific TX band. The noise floor of the Tx signal contributes to production of foldover noise due to intermodulation phenomenon caused by nonlinearity of the PA (732). However, because the portion of the noise floor within the Tx band is reduced by going through the appropriate bandpass filter for the Tx signal and because the foldover noise production is a nonlinear phenomenon, the resulting reduced noise floor contributes significantly less to the foldover noise generated by the PA (732)